REMARKS

In an office action dated April 23, 2003, the Examiner rejected claims 1-4, 6, 7, 10-12, 14, 17, and 19-23 as anticipated under 35 U.S.C. § 102(b) by *Motegi*, et al (U.S. 4,930,358). The Examiner objected to claim 21. Applicants also note with appreciation the Examiner's indication of allowable subject matter in claims 5, 8, 9, 13, 15, 16, and 18.

The Examiner, at p. 2 of the office action, suggests that *Motegi* teaches determining whether there exists a peak selection error based on the length of the first path, the second path, a first average transit time, and a second average transit time at col. 8, ll 14-23 and Figures 2, 4, and 8. The Applicants respectfully submit that the Examiner's rejection of claims 1, 10, 20, and 22 is mistaken.

Claim 1 recites a combination of features that are not taught or suggested by *Motegi*. Claim 1, for example, recites a method to detect a peak selection error. It may be worthwhile to explain what a peak detection error is, and how it differs from simply measuring an ultrasonic signal. It is admitted in the Background section of the instant application that ultrasonic flow meters, and measurement of transit times for ultrasonic meters, is known. As expressed in instant paragraph 17, however, a difficulty that arises in measuring a time of flight exactly is defining when an ultrasonic waveform is received. There are a variety of ways of doing this, such as to define it as a zero crossing that follows a predefined voltage threshold value for the waveform, or that follows some other predefined threshold or criterion. Still, what if such a technique in a particular case causes the arrival time to be misidentified? What technique should be used, not to measure a transit time for an ultrasonic signal, but to determine if there has been an error in that measured transit time? One such technique is disclosed in the instant application to determine the error, in this case referred to as a peak selection error.

Motegi, as disclosed in its Abstract and at col. 2, ll. 57-58, discloses a method of and an apparatus for measuring the flow velocity by ultrasonic waves. Nowhere does *Motegi* disclose a method or approach to detect an error in ultrasonic waveform arrival time. If a measurement error occurred, *Motegi* would not identify it and would report the measurement as true. *Motegi* also cannot, therefore, teach determination of a peak detection error based on the length of a first path, a second path, a first average transit time, and second average transit time.

Motegi discusses changes to the physical construction of a meter to reduce the possibility of a spurious signal, but if such a spurious signal is detected *Motegi* does not identify it as such. The passage of *Motegi* at col. 8, cited by the Examiner, discusses a correlation between the lengths of the ultrasonic transducers and errors in the measured flow velocity. As disclosed at col. 1, ll 12-14, this error arises from mounting ultrasonic transducers on the outer surface of a portion of piping, not from a peak selection error.

Figure 2 shows upstream and downstream travel paths, but they appear to be the same path. Figure 4 shows the operation of two transducers mounted on the outside surface of piping. Figure 8 is a chart showing the spreading of the received wave when the angle of spreading and the directivity characteristics are small.

None of the cited passages or Figures appear to relate to peak measurement errors, or how to determine whether a peak measurement error exists. Allowance of all the claims is respectfully requested.

With regard to claims 10, claim 10 requires determining average transit times for ultrasonic signals across first and second ultrasonic paths, and identifying measurement errors in those transit time measurements. To reject the claim the Examiner points to the Abstract, Figure 1 (unit 3), col. 8, ll. 14-23, Figure 1 (unit 19), and Figures 2, 3, and 5.

The Applicants respectfully submit that the examiner is mistaken. *Motegi* does not teach two transducer pairs. The passage cited to by the Examiner for the presence of a second transducer pair returns to the same transducers (1 and 2) as used for the first transducer pair, shown in Figure 1. Also the "second path length" indicated by the Examiner at col. 8, ll. 14-23, is not a path length: "b" defines the size of the transducer (as shown in Figure 3). *Motegi* does not anticipate claim 10.

With regard to claim 20, as shown above, *Motegi* does not disclose first and second average transit times for at least two paths of different lengths and determining transit time measurement errors.

With regard to claim 22, *Motegi* does not disclose first and second transducer pairs, or means for determining transmit time measurement errors for ultrasonic signals in the first and second transducer pairs.

Allowance of all pending claims is respectfully requested.

Respectfully submitted,

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